

**Remarks/Arguments:**

Claims 1, 7-14 and 18-24 are currently pending in this application. Claims 1 and 14 have been amended. Support for the amendments to the claims may be found, for example in the specification, page 48, lines 1 to 15, and claims as originally filed. No new matter is added.

In view of the foregoing amendments and following remarks, reconsideration and allowance are respectfully requested.

**I. Rejections Under 35 U.S.C. §103**

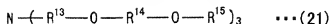
**A. Miyazawa**

The Office Action rejects claims 1, 7-12, 14, and 18-22 under 35 U.S.C. §103(a) over Japanese Publication No. JP 2003-040840 to Miyazawa et al. (“Miyazawa”). Applicants respectfully traverse this rejection and request reconsideration on the basis that Miyazawa fails to render the claims obvious.

In order to provide a *prima facie* case of obviousness, a reference or combination of references must disclose every element of the claims, *In re Glatt Air*, 630 F.3d 1026, 1030 (Fed. Cir. 2011), along with a rationale for combining references or modifying a reference and predictable results or an expectation of success.

The Examiner asserts that Miyazawa discloses most of the features of the instant claims. The Examiner also acknowledges that “Miyazawa does not specifically teach the monomer units in amounts of 20-80mol%.” Nevertheless, the Examiner asserts that “it would have been obvious to one of ordinary skill in the art to optimize the methacrylic and acrylic acid ester monomer units in amounts of 20-80mol%.” *See* Office Action, page 3, last paragraph through page 4, first paragraph.

Without conceding the propriety of the rejections, independent claims 1 and 14 are amended to more clearly recite various novel features of the claimed invention. Specifically, each of independent claims 1 and 14 is amended to recite that a positive-type resist composition for liquid immersion lithography comprises: a nitrogen-containing organic compound represented by the following general formula (21):



wherein,  $\text{R}^{13}$  and  $\text{R}^{14}$  each independently represent a lower alkylene group having 1 to 5 carbon atoms, and  $\text{R}^{15}$  represents a lower alkyl group having 1 to 5 carbon atoms. Miyazawa does not teach or suggest such features.

The positive-type resist composition for liquid immersion lithography of the present invention according to amended claims comprises a nitrogen-containing organic compound represented by the above general formula (21).

Applicants respectfully submit that by comprising such a nitrogen-containing organic compound, resist pattern configuration, post exposure temporal stability and the like can be improved. In addition, since the nitrogen-containing organic compound represented by the above general formula (21) is poorly soluble in an immersion liquid used in liquid immersion lithography process, it can be suitably used in a liquid immersion lithography process.

Miyazawa nowhere teaches or suggests a nitrogen-containing organic compound, as claimed. Accordingly, independent claims 1 and 14 would not have been rendered obvious by Miyazawa. Claims 7-12 and 18-22 variously depend from claim 1 and, thus, also would not have been rendered obvious by Miyazawa. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

**B. Miyazawa in view of Endo**

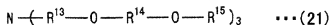
The Office Action rejects claims 1, 13, 14, 23, and 24 under 35 U.S.C. §103(a) over Miyazawa in view of U.S. Publication No. 2004/0259040 to Endo et al. ("Endo"). Applicants respectfully traverse this rejection and request reconsideration on the basis that Miyazawa and Endo fail to render the claims obvious.

The Examiner acknowledges that "Miyazawa does not teach a method of forming the resist pattern by immersion lithography." Nevertheless, the Examiner asserts that "it would have been obvious to one of ordinary skill in the art to use the immersion exposure as allegedly disclosed by Endo in the composition of Miyazawa because immersion exposure is well known to improve resolution and refine patterns at conventional exposure wavelengths. Applicants respectfully disagree with the Examiner's assertion.

Foremost, it is simply alleged in the Office Action that the motivation for modifying the composition of Miyazawa based on the alleged teachings of Endo would have been "because immersion exposure is well known to improve resolution and refine patterns at conventional exposure wavelengths." (Office Action, p. 5). However, this alleged motivation does not identify any benefit to making such a modification that can be found in the references or otherwise, i.e., why would the skilled artisan would have wanted to be able to improve resolution and refine patterns at conventional exposure wavelengths in Miyazawa based on the state of the art. See MPEP §2143.01(III), which states that "the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggest the desirability of the combination." See also the conclusion of the Patent Office's May 3, 2007 Memorandum regarding the Federal Circuit's *KSR Int'l. Co.v. Teleflex, Inc.* decision, which states, "it remains necessary to identify the reason why a person of ordinary skill in the art would have combined the prior art elements in the manner claimed."

Because the Office Action has failed to identify any benefit associated with the alleged modification of Miyazawa, the rejection is improper.

Additionally, in an effort to expedite prosecution, independent claims 1 and 14 are amended to more clearly recite various novel features of the claimed invention. Specifically, each of independent claims 1 and 14 is amended to recite that a positive-type resist composition for liquid immersion lithography comprises: a nitrogen-containing organic compound represented by the following general formula (21):



wherein,  $\text{R}^{13}$  and  $\text{R}^{14}$  each independently represent a lower alkylene group having 1 to 5 carbon atoms, and  $\text{R}^{15}$  represents a lower alkyl group having 1 to 5 carbon atoms. Miyazawa does not teach or suggest such features. Endo fails to cure the deficiencies of Miyazawa, as it also fails to teach or suggest such features.

As mentioned above, by comprising a nitrogen-containing organic compound, as claimed, resist pattern configuration, post exposure temporal stability and the like can be improved. In addition, since the nitrogen-containing organic compound represented by the above general formula (21) is poorly soluble in an immersion liquid used in liquid immersion lithography process, it can be suitably used in a liquid immersion lithography process.

Miyazawa and Endo, whether considered independently or combined fail to teach or suggest a nitrogen-containing organic compound, as claimed. Therefore, independent claims 1 and 14 would not have been rendered obvious by Miyazawa and Endo. Claims 13, 23, and 24 variously depend from claims 1 and 14 and, thus, also would not have been rendered obvious by Miyazawa and Endo. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

**II. Conclusion**

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of the application are earnestly solicited.

The Commissioner is hereby authorized to charge payment of any additional fees associated with this communication, or credit any overpayment, to Deposit Account No. 08-2461. Such authorization includes authorization to charge fees for extensions of time, if any, under 37 C.F.R. § 1.17 and also should be treated as a constructive petition for an extension of time in this reply or any future reply pursuant to 37 C.F.R. § 1.136.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

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